

APPENDIX 4-A**STORAGE OF IODINE**

1. *Description.* Iodine is a heavy, grayish-black solid in the form of plates, crystals, or granules. It is used in medicine, pharmacy, photographic chemicals, and organic chemical processes. When acquired, Iodine shall meet Purchase Specification P-24-R4 (Current Edition).

2. *Packaging.* Iodine will be packaged and received in containers meeting current acquisition specifications. Containers in a shipment lot will be one type and the same nominal size and shape.

3. *Marking.* Prior to receipt, each container will be marked with the name of the product, Government contract number, gross and net weights, and "Glass, Handle With Care." In some instances, the country of origin and date packed will also be shown.

4. *Storage*

a. Iodine shall normally be stored in a cool, dry, well ventilated, sprinklered warehouse. However, storage space suitable for ammunition or hazardous materials is acceptable. Segregation shall be by contract lot number. Any containers received in a damaged condition or which become damaged in storage must be set aside and immediately reported to DNSC-OL.

b. A complete description of each lot or portion of a lot within a particular location will be indicated on a card which shall be prominently displayed and securely attached to each stack. DNSC storage sites will use the DNSC 41, "Warehouse Material Identification Card," for this purpose. This form, which is specifically designed for use with stockpile materials, will be furnished to military depots upon request.

c. Boxes shall be stored on base floor pallets in uniform rows and number of tiers so as to facilitate the taking of an inventory at any time by a physical count and computation. If pallets are used between tiers, a uniform number of boxes shall be placed on each pallet, except when an odd number on the top pallet of a stack of uniform height will complete the lot. In doing this, economical use of space must be given full consideration and all segregation requirements must be met. To the extent possible, all pallets under any one contiguous storage pile shall be placed so that the stringers are parallel, in order to obtain maximum ventilation. It is not intended that any material will be rewarehoused solely to conform with this requirement; it applies to new receipts and material rewarehoused for other reasons.

5. *Precautions To Be Taken*

a. *Safety and Health.* Solid iodine exhibits low volatility at ordinary room temperature and slowly vaporizes at more elevated temperatures that employees will be exposed to in warehouse environments during the warm summer months. If there are cracks or leaks in or around the jar cap and liner, the vapor will stain the outer packagings and permeate into the warehouse air. Workers should refer to the DNSC Occupational Health Guidelines for Iodine.

b. *Toxic Properties.*

(1) *Inhalation.* Iodine vapor is extremely irritating to the respiratory tract. Workers who have accidentally inhaled iodine vapors reported excessive flow of tears, a feeling of tightness in the chest, sore throat and headache.

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(2) *Skin Contact.* Chemical iodine is a tissue irritant. It can precipitate protein and continue to penetrate and damage the skin. Iodine can be absorbed through contact or from vapor applied to the skin.

(3) *Eye Contact.* Exposure to high concentrations of iodine vapor can cause irritation, excessive watering and damage to the corneal lining.

c. Recommended Controls.

(1) *Inhalation.* The warning properties (odor, smell) of iodine vapor are not adequate to prevent excessive inhalation exposures. Appropriate local exhaust ventilation shall be used to aid in the removal of iodine vapor during work-related activities such as repackaging and recapping. Containers of iodine shall be opened in well-ventilated areas or in close proximity to local exhaust hoods.

(2) *Skin Contact.* Protective clothing shall be used to prevent skin contact with solid iodine.

(3) *Eye Contact.* Chemical workers goggles shall be worn where there is a possibility of eye contact with solid iodine.

(4) *Fire or Explosion.* Iodine is nonflammable. It is an oxidizing agent and can react with explosive violence with some materials such as acetylene or ammonia. See the National Fire Protection Association (NFPA Guide on Hazardous Materials, latest revision).

d. Medical Information.

(1) *General.* The primary health hazard is irritation of the respiratory tract. Depending upon the amount of exposure the irritation may be mild and transient, or it could progress rapidly to pulmonary edema. The irritating effects of vapor exposure is so intense that it is improbable that a person would get a sufficiently high absorbed dose to create the latter effect.

(2) *Emergency Treatment.* Following any severe inhalation exposure the employee shall be put at complete rest immediately and medical assistance obtained. Eye exposure shall be treated immediately with water irrigation and continued for at least 15 minutes.

6. *Average Storage Factor.* 11 gross square feet per short ton.

FOR ADDITIONAL INFORMATION ON THIS COMMODITY REFER TO THE MATERIAL SAFETY DATA SHEET OR THE MOST RECENT PURCHASE SPECIFICATION.